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An Organizational Guide to Pollution Prevention

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NOTICE

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FOREWORD

The U.S. Environmental Protection Agency is charged by Congress with protecting the Nation's land, air, and water resources. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions leading to a compatible balance between human activities and the ability of natural systems to support and nurture life. To meet this mandate, EPA's research program is providing data and technical support for solving environmental problems today and building a science knowledge base necessary to manage our ecological resources wisely, understand how pollutants affect our health, and prevent or reduce environmental risks in the future.

The National Risk Management Research Laboratory (NRMRL) is the Agency's center for investigation of technological and management approaches for preventing and reducing risks from pollution that threaten human health and the environment. The focus of the Laboratory's research program is on methods and their cost-effectiveness for prevention and control of pollution to air, land, water, and subsurface resources; protection of water quality in public water systems; remediation of contaminated sites, sediments and ground water; prevention and control of indoor air pollution; and restoration of ecosystems. NRMRL collaborates with both public and private sector partners to foster technologies that reduce the cost of compliance and to anticipate emerging problems. NRMRL's research provides solutions to environmental problems by: developing and promoting technologies that protect and improve the environment; advancing scientific and engineering information to support regulatory and policy decisions; and providing the technical support and information transfer to ensure implementation of environmental regulations and strategies at the national, state, and community levels.

This publication has been produced as part of the Laboratory's strategic long-term research plan. It is published and made available by EPA's Office of Research and Development to assist the user community and to link researchers with their clients.

E. Timothy Oppelt, Director
National Risk Management Research Laboratory

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Science Applications International Corporation (SAIC) compiled and prepared the information used for this *Guide* under the management of Lisa K. Kulujian. The authors were Dr. Robert B. Pojasek, Pojasek & Associates, and Cam Metcalf, Executive Director, Kentucky Pollution Prevention Center. Custom Editorial Productions (CEP) of Cincinnati, Ohio, prepared the final document for publication.

The seeds for this document were planted by a Focus Group comprised of invited pollution prevention practitioners from US EPA, Regional and State programs, industry, and academia. This Focus Group was conducted in Cincinnati, Ohio, in conjunction with the National Pollution Prevention Roundtable in the Spring of 1998. It was further shaped by an Engineering Conference conducted in Crested Butte, Colorado, in the Fall of 1998. The final draft of this *Guide* was distributed to more that two hundred pollution prevention practitioners. The following people (in alphabetical order) spent valuable time reviewing and commenting on this publication, providing significant input that helped the authors in making it a more complete and accurate informational *Guide*:

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ABSTRACT

This *Pollution Prevention (P2) Guide* provides information to help organizations get P2 programs started or to re-evaluate existing P2 programs. It presents an alternative method for working on P2 projects and four approaches to implementing a P2 program in an organization. This *Guide* was not written to provide a "one-size-fits-all" formula for starting or improving a P2 Program. The intention is to spark some ideas and provide tools that can be used to successfully complete an organization's P2 mission.

Also, the *Guide* is *not* intended to be an exhaustive review of case studies and company examples. It does not include information on state P2 planning requirements. In order to keep this document a reasonable length, these examples have been cited in the references section, and supplemental information is provided on the CD-ROM that accompanies this *Guide*. There are many U.S. Environmental Protection Agency (EPA) programs that support the practice of P2, including Environmental Accounting Project, Design for Environment, P2 Resource Exchange, Environmentally Preferable Purchasing, Sustainable Industry Project, Performance Track Program, and other initiatives across the Agency. Internet links to these programs and other information are provided on the CD-ROM.

An Organizational Guide to Pollution Prevention is organized into three basic sections:

1.	**Basic P2 Concepts and Tools (Chapters 1-4)**	Introduction to P2, Getting Started, P2 Program Elements, and P2 Tools
2.	**P2 Program Implementation Approaches (Chapters 5-8)**	Traditional Approach, EMS Approach, Quality Approach, and Finding Your Own Way to Implement P2
3.	**Companion CD-ROM**	Supporting P2 Information

The EPA acknowledges the efforts of the principal authors of this *Guide*–Dr. Robert Pojasek (President, Pojasek & Associates) and Mr. Cam Metcalf (Executive Director, Kentucky Pollution Prevention Center). This *Guide* was prepared in fulfillment of Contract Number 68-C7-0011, Work Assignment #3-20, by Science Applications International Corporation, under the sponsorship of the EPA. Ms. Emma Lou George was the EPA Project Officer.

ACRONYMS

ACC = American Chemistry Council

BAT = best available technology

BMP = best management practice

CSI = Common Sense Initiative

DfE = Design for Environment

EHS = environment, health, and safety

EMAS = eco-management and audit scheme

EAP = Environmental Accounting Project

EMP = environmental management program

EMS = environmental management system

EPA = Environmental Protection Agency

EPP = Environmentally Preferable Purchasing

FDA = Food and Drug Administration

ISO = International Organization for Standardization

JIT = just-in-time

MSDS = material safety data sheet

MSWG = Multi-State Working Group

NGO = non-government organization

OSHA = Occupational Safety and Health Administration

P2 = pollution prevention

P2Rx = P2 Resource Exchange

PCB = polychlorinated biphenyl

PSM = process safety management

QA/QC = quality assurance/quality control

SGP = Strategic Goals Program

SOP = standard operating procedure

TQM = total quality management

VOC = volatile organic chemical

WBCSD = World Business Council for Sustainable Development

XL = eXcellence and Leadership

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